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**Original Communications.**

**ON THE INTERNAL ADMINISTRATION OF  
CHLOROFORM IN CONGESTIONS.**

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THE two following cases are reported to illustrate the almost instantaneous action of chloroform in controlling congestions:—

CASE I.—*Congestion of Lungs and Brain.*  
L. H., bachelor, aged 25; workman in glass-works in summer, music-teacher in winter; temperament nervo-sanguine, constitution strong. In 1863, having previously been a sailor, he enlisted in the navy, and was attached to an iron-clad. During an engagement, as he was standing between decks, with his back against an iron stanchion, a shell struck the upper deck, directly over his head; and the thrill communicated to the stanchion threw him forward upon the deck, insensible. For five months, he was disabled, being partially paralyzed, and unable to straighten himself. On his recovery he enlisted in the cavalry, but, after a short time, while on the march in a hot sun, he fell from his horse insensible, and was supposed to have a sunstroke. This was followed by a prolonged sickness, in consequence of which he was discharged. Since then, he has had good general health, but has had two attacks of violent convulsions and delirium, beginning with hæmorrhage from the lungs, and each followed by an alarming illness of several weeks, judged from the account of symptoms to have been brain fever. He has also been subject to severe headaches, accompanied with numbness of the left side.

On June 8th, 1869, he was well until 1, P.M., when he was attacked with headache, and went to bed. Shortly after, he felt great oppression at the chest, and expectorated a little frothy blood. He then became convulsed and delirious.

Was first seen by me two hours after the first attack. Was then wildly delirious, requiring to be held by several men; struggling for breath; clutching at the chest; face and lips livid; pulse 100, very full and

hard; pupils slightly and equally dilated, not sensitive to light; patient entirely insensible to all external impressions. On auscultation, respiration was found to be chiefly tubular. This condition soon gave place to an epileptiform convulsion, with total insensibility, opisthotonos, but no frothing at the mouth. After some minutes, relaxation took place, he became partly conscious, and, after dozing a few minutes, again became wildly delirious. This alternation, I was told, had continued from the first. Had also short, convulsive cough, without expectoration. These symptoms leading me to a diagnosis of congestion of the lungs and brain, I gave, by the mouth, chloroform ʒss., with fl. ext. ergotæ (Squibb's), ʒss., applied mustard to the chest and ice to the head, after cutting the hair short. In less than five minutes the breathing became deep and natural, he ceased to clutch at the chest, the lividity of the face disappeared, and the pulse became softer. From this time he had no convulsion, but was actively delirious, at intervals shouting and struggling, for two hours longer, during which time the same dose of chloroform and ergot was repeated every half hour. At 5, P.M., he had ceased to be delirious, and slept naturally. I gave a cathartic, and left him till 7, P.M. On my return, he was awake, quiet and rational; pupils normal; breathing naturally; feeling extreme exhaustion; left arm and leg completely paralyzed. Pulse very soft, 120. From this time there was no return of the symptoms. At 9, P.M. he was given a pill of morph. sulph., ext. belladon., aa gr. ʒ. He slept pretty well, vomiting once and having one dejection during the night. The next morning the paralysis had disappeared; and, in the afternoon, he sat up, but felt very weak, and had nausea and occasional vomiting. This was entirely relieved by one five-grain dose of subnitrate of bismuth. He also had one grain of sulphate of quinine every three hours. On the sixth day he walked out and came to my office, and soon afterwards returned to work. Since then he has had excellent health and no cough; but has had occa-

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sional headaches, especially after violent exertion. A thorough examination of the lungs has shown them to be free from disease. This attack was said by the patient and his friends to be precisely similar to the two he has had since leaving the army, beginning with hæmoptysis, and going on to convulsions and delirium; but they were each followed by several weeks illness, with symptoms described like brain fever, and a tedious convalescence. The instant relief of the pulmonary and cerebral congestion I attribute to the chloroform, which was aided a little later by the ergot, my experience of whose value in convulsions has been most happy. It is probable that, by this early relief of cerebral congestion, an attack of cerebral inflammation was evaded.

**CASE II.—Hæmoptysis.**—W. B., widower; aged 51; commercial traveller; temperament nervo-bilious; of phthisical family; constitution originally very strong, but now broken by hard work and dissipation. For several years has suffered with asthmatic cough and dyspnoea, but has not had hæmoptysis.

On the morning of July 16th, 1869, did not feel very well, and drank some hot spirits. Soon after, profuse hæmoptysis came on. When I saw him, shortly after, he had lost a full pint of bright, frothy blood, mixed with clots, and was still bleeding; felt great oppression across the chest, and said he could feel the blood flowing from a point in the lower portion and front of the left lung. I gave him immediately chloroform ʒss. The bleeding ceased, almost instantaneously, and he said the oppression at the chest was removed, as soon as he had swallowed the medicine. The chloroform was repeated three times, at intervals of half an hour, combined, after the first dose, with acid. sulph. arom. ʒss. Patient soon slept and perspired very profusely; had occasional slight cough, but no bleeding till evening, when another attack came on, almost as profuse as the first; and the next day there were two others. They were all treated in the same way as the first, with the same immediate arrest of the hæmorrhage. During the intervals, acid. sulph. arom. and acid. gallic. were given. After the fourth attack, patient was extremely exhausted, having lost nearly if not quite a pint of blood, at each attack. He was then given pills of plumb. acet. and opium, and has since had no hæmoptysis, though he has had cough and expectoration, with general debility. On auscultation, the lower half of the left lung was found full of tubercles.

The action of the chloroform, in this case, seemed to be, to relieve the pulmonary congestion, as shown by the immediate cessation of the "oppressed" sensation, and arrest of the hæmorrhage. It therefore seems to me an invaluable remedy in hæmoptysis. I have never heard of its being so used before, and would be glad to hear of similar cases.

I have also treated several cases of colic, some of them of extreme severity, with chloroform, in doses of from ʒi to ʒj.; and always with immediate and complete relief. These doses are always followed by profuse sweating, and, after a few hours, by more or less nausea and vomiting, which is always, in my experience, relieved by a little bismuth. In minute doses, I have found chloroform the best of all remedies for irritating bronchial cough, and, in these cases, use it largely.

#### A CONTRIBUTION TO THE PHYSIOLOGICAL STUDY OF VERATRUM VIRIDE AND VERATRIA, WITH EXPERIMENTS.

(Concluded from page 187.)

The first peculiar effect produced by this drug, it may be noticed, is salivation; and this is followed by retching, movement of the bowels, vomiting, &c.; after this, the respiratory efforts are hurried, muscular actions are imperfectly performed, spasm of the bladder causes ejection of urine. Finally, death occurs, preceded by tetanic spasms.

**Exp. V.**—We will now compare with these another experiment, upon a small rabbit weighing only 15 ounces Troy.

A.m.s.	Resp.	Condition of Pupil.	Circulation.	General Symptoms, Remarks, &c.
0.00	92	carefully examined.	240	1 centigr. inserted under skin of back, which made the animal cry out in a few seconds. Animal now quiet. Champing of jaws.
0.02				
0.05	slow & jerk'g.	contract'd.	144	
0.07		dilated.	108	
0.09				
0.11			no pulse.	Large quantity of saliva oozes from the mouth. Ears very cold and pale. Chest opened; heart pulsates feebly; r. ventricle and auricle distended with blood. The contraction of auricle more rapid than that of ventricle (96:48) (120:30). Pulsation of each becomes more and more feeble and irregular, although the heart is kept moist. In 53 min., there is no pulsation visible.

Examination of the body, made immediately, showed the veins turgid, fauces and œsophagus pale, no peristalsis of bowels to

stimulation or to galvanic current, very slight contraction of leg muscles on electrical stimulation, heart empty, the lungs ecchymosed (one small hemorrhagic spot in right side), brain normal.

An examination of this last experiment, showing that salivation is caused even when the drug is administered hypodermically, would induce us to consider, that it is not local irritation of the buccal mucous membrane which causes the salivary gland to throw out its saliva, but that this effect is probably caused by an irritation of the lingual nerve, or submaxillary ganglion, which Bernard\* has shown will cause salivation; but, before we investigate this phenomenon, let us compare with these first experiments that of the action of veratria on a dog.

Exp. VI.—To a vigorous bitch, of about forty-five pounds weight, was given 3ss. of chloroform until she became quiet. Then ether was used, and the animal bound upon the operating-board.

A.m.s.	Pulse.	Resp.	Remarks.
	148	34	Before the inhalation of chloroform.
	174	56	Imperfect anaesthesia.
	142	40	Perfect anaesthesia.
	134	40	
			Veratria gr. 38, dil. acetic acid, q. s., injected in right leg subcutaneously.
0.02 00	112	40	
0.05 15	120	36	Animal is calm.
0.06 15	112	40	
0.08 30	120	36	
0.09 30	116	32	
0.10 00	116	16	
0.12 30	114	15	Muscular quivering in trunk.
0.14 00	108	12	Ether is now removed.
0.16 00	108	10	Abdominal respiration.
0.18 00	102	84	
0.20 30	104	64	Respiration feeble.
0.25 00	102	128	Animal gasps.
0.27 00	88	11	Animal struggles.
0.30 00	36	32	Another gasp.
0.31 30	80	28	Skin is cold.
0.35 00	72	22	
0.37 30	84	17	Pulsation stronger.
0.40 00	98	10	Difficult and noisy inspiration. Struggles.
0.45 00	98	14	Expiration slow and noiseless; muscular contraction by electric stimulation feeble, especially in posterior train.
0.49 00	108		
0.52 00	120	15	Struggles violently. Irreg. resp.
0.54 00	120	13	Musc. relaxation; loss of sensat'n.
0.56 30	126	20	Difficult respiration, with violent movements of neck muscles.
1.00 00	108	12	Respiration very feeble, with mucous rales in throat.
1.05 00	128	ceas'd	
1.09 00	92		
1.09 30	gone.		No response to electrical stimulation of nerves, though the muscular fibres contract when the poles are applied to these directly
1.12 00			Nerves of neck and forearm exposed; electrical stim. does not cause muscular contraction.
1.15 00			

\* Vide Compt. Ren. de l'Acad. des Sci., 25 Aug. 1862.

Post-mortem examination (immediately).—Heart normal in appearance; clots in left ventricle; fluid blood in right ventricle; right auricle contains blood which is slightly diffuent; left auricle empty. Lungs apparently healthy; crepitate between the fingers. Liver, kidneys, spleen and pancreas all normal. Stomach and intestines show slight arborescent redness. Stomach reddened on the inside, and nearly full of a viscid fluid like saliva. Bladder nearly empty.

It may be noticed that chloroform and ether were administered to produce anaesthesia. This was preliminary to an operation to measure the arterial tension which will be described and commented upon elsewhere (Exp. VI. b). This experiment is related in this place, as it was conducted with great care, and many assistants aided in the taking of observations, which it may be noticed are very accurately described. Attention is called to the fact that the general effect of the drug upon the vital functions agrees with other experiments upon animals not under the effects of an anaesthetic. The effect upon the respiration, if carefully observed, shows at first the depressing action of both veratria and ether; but from thirty minutes after the commencement of the experiment, and sixteen minutes after the removal of the ether, probably the peculiarities of respiration were due only to the veratria, viz., great irregularity of force and frequency, but less than one-half the number of respiratory efforts as in the normal condition, and this gradually reduced to zero. The effect upon the circulation can best be understood in connection with observations taken by means of the cardiometer. Suffice it merely to note that the sedative effect is progressive from the first, and that the heart stops pulsating after the respiration ceases, and this, too, very suddenly; though its force may have been very feeble for some time previous.

The stoppage of the respiratory effort resembles that of a person dying from paralysis, in consequence of lesion of the spinal axis, and we are strengthened in this supposition, by noting no part of the nervous system that will conduct electrical stimulation to the muscular fibres, though these last by direct stimulation will themselves contract. A careful examination of the post-mortem appearance points to no organic lesion, as all the viscera are apparently healthy, and death by asphyxia does not seem very manifest, there being no venous engorgement or sufficient ecchymosis

of the lung tissue. We shall probably find as we continue our study that the cause of death is due to some physiological rather than anatomical lesion, perhaps to some vital derangement of the nervous system; but before we discuss this point, we will notice what important vital functions are interrupted or modified.

Absence of vomiting may be noticed in this experiment; and, consequently, the exhaustion induced by this terrible symptom cannot be the cause of death in the experiments previously reported. The fact that there was no vomiting in this case would tend to show that the chloroform or ether may have, by its peculiar action, prevented the appearance of this symptom.

#### CIRCULATION.

We will now consider the effects produced by this drug upon the circulation, illustrative of which will be the following carefully recorded experiment.

EXP. VII.—Green frog. Thorax opened and cardiac pulsations viewed.

A. m. s.	Pulse.	Resp.	Remarks.
	25	48	Before administration. Tinct. veratri viridis officin. gtt. xij. now injected in groin.
0.02.00	26	46	
0.06.00		34-38	
0.09.00	28		Struggles occasionally.
0.11.00	24		Respiratory movement feeble.
0.16.00	24	ceases	
19-23	24		
0.25.00	24		
0.28.00	24		Spasmodic movements.
0.35.00	26		Heart's contractions regular in force and frequency.
			Position of animal changed.
0.36.00	26		
0.39.00	26		
0.59.00	24		
1.05.00	27	begins	Spasmodic movements.
1.10.00	30		Recovers & lives for a few days.

This may be considered the *therapeutical* action of this drug, as the animal recovered from the effects.\* The depressing effect upon the respiratory function is remarkable, and seems to be the sole symptom worthy of record, except that of the heart, which, instead of being slower, becomes more rapid than before the drug was given.

EXP. VIII. Green frog. Tinct. ver. vir. gtt. xxiii.

\* In this case respiration was, probably, carried on through the skin, until the drug was eliminated sufficiently to allow the respiratory movements of the thorax to be reestablished. In my notes, I find an experiment in which a frog lived one hour and twenty minutes under an atmospheric pressure varying from .100 to .010 m. Respiration having ceased, he was placed on a table. The next morning he was found alive upon the floor.

R. A.

A. m. s.	Circ.	Resp.	Remarks.
	40	50	Before administration. Thorax opened. Hypodermic injection of the above in groin.
0.01		48	
0.02	32	33	Respiration feeble.
0.05	40		Muscular quiverings.
0.12	32.8		Respiratory movements too feeble to count.
0.15		35	Respiration ceased.
0.17	33.3		
0.20	30		Moistened the animal with water.
0.21	35		Causes an improvement of circulation.
0.24	35		
0.26	31		Muscular quiverings.
0.30	31		Pulsation feeble.
0.33			Animal again moistened with water.
0.34	33.3		Causes temporary improvement.
0.36	32		Slight spasm. movements; mus. quiverings in posterior limbs.
			Circ. very feeble. Gasps once or twice; resp. spasmodic.
0.41	30	14	
0.44	31	12	
0.47	31	54	Reflex movements in lower limbs. Ventricular contraction very feeble. Auricle not visible.
0.50	31		
0.53		44	Animal appears sensitive to irritation.
0.54	33		Reflex response less active.
0.57		15	Respiration jerky.
0.59	32		
1.00		15	Respiration feeble.
1.02	34		Respiration ceased. Sensation apparently preserved.
1.06	35		
1.10	35		
1.13	32		
1.17	31		
1.21	30		Musc. quiverings still continue.
			Spasms.
1.25	30		Spasms. Reflex response continues.
1.36	30		Spasm. movements at intervals.
1.39	28		Reflex response diminished.
1.42	28		
1.44	27		Slight spasm. Reflex response gone.
1.48	25		

The animal was found dead the next day, and looked as if this happened very soon after the experimenter left. Here the action upon the respiration is very marked, and long after the cessation of this function, and for a short time after the loss of reflex action the cardiac pulsation is not materially modified. It may be objected to by some that the injury to the thorax caused more of the trouble than the drug. In reply to this it may be stated that the effects upon the circulation and respiration of frogs agrees with that of other and warm-blooded animals. But to settle any doubts the following experiment was tried and will now be related.

EXP. IX.—A frog was operated upon in the same manner as before described, by opening the thorax and exposing the ventricle and auricle (by the way, a very com-



mon experiment among physiologists), and the pulsations compared with those of another frog treated in the same manner, but to whom a poisonous dose of a solution of veratria had been injected hypodermically. The first frog had 38 cardiac pulsations each minute, while the second frog went through all the phases of veratria poisoning before described. The respiratory movement of the first did not vary for a week, and the circulation appeared very natural. At this time the animal died, but, as supposed, because he had been placed in a bottle the water of which was changed but once, from neglect. This demonstrates the fact that such an animal can survive an operation apparently so mortal.

**Brain.**—In none of our experiments were there any signs of cerebral lesion. The intelligence seemed to be perfectly retained almost to the moment of death. Indeed, in cases of poisoning in man this fact is corroborated. The animals could see, hear, feel and understand, so far as they ordinarily can. The only times that we examined the brain, there was apparently no cerebral apoplexy, congestion or anæmia, the only lesions which we should expect to find in a drug which causes death so soon after its administration.

In regard to the spinal cord we prefer to speak hereafter and more at length.

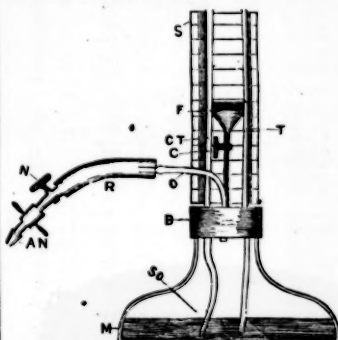
**Stomach.**—The excessive vomiting met with in poisoning from this drug has caused us to investigate the condition of that viscus, which only once did we find congested (Exp. VI.), and this we should suppose is accounted for by the fact, that digestion may have been going on at the time the drug was administered. The redness was not like that caused by an irritant, and in this case there was vomiting. Besides all these reasons the drug was administered hypodermically. Therefore, we conclude that the vomiting was not caused by the irritant action of the drug upon the mucous membrane of the stomach, but by irritation of the nervous periphery transmitted to the nervous centre, or of the nervous centre itself. Its effect upon the intestinal excretion being probably due to the same cause, we shall at present merely state that generally, though not always, an evacuation of the bowels occurs.

The secretion in the kidneys seems not peculiarly increased or diminished by this drug. Salivation, noticed in these experiments, is also, most probably, due to irritation, so called, of the nervous system, and not on account of any increased vascular determination to the secreting glands. Our

attention has not been especially directed to the other viscera by the symptoms noticed in our experiments.

The effect upon the circulation in warm-blooded animals has been carefully studied, and especially so by an instrument to measure the pressure of blood in the vessels.

**Description of the Instrument.**—The instrument used corresponds, with a few modifications, with one described by Dr. Brunton in his monograph on *Digitalis*. The results arrived at have been observed with four different instruments, always agreeing in every essential.



- S. Scale, divided into centimetres and millimetres.
- F. Copper funnel and tube, passing through the brass cap.
- C. Stop-cock to shut off escape or entrance to air.
- CT. Capillary tube, with constriction at lower end.
- T. Capillary tube, uniform diameter.
- O. Tube through which the blood-pressure is exerted.
- B. Brass cap, fitting on to the glass stand by a screw and washers.
- S O. Cavity of glass stand.
- M. Mercury.
- R. Rubber tube connecting with nozzle.
- N. Brass nozzle, with stop-cock.
- A N. Nozzle upon which the artery is fixed.

The accompanying plate will perhaps give a more definite idea of the hemodynamometer. A glass stand is fitted with a brass cap (B) into which are inserted two glass tubes (C and CT) of the same calibre, though C has a capillary constriction near its lower extremity where it dips into the mercury (M); also, a copper funnel-shaped tube (F), furnished with a stopcock (C) and another glass tube of larger capacity (O), with which the artery is connected by means of a rubber tube (R), in which is inserted a brass nozzle (N), furnished with a stop cock, and another nozzle (AN) furnished with a shoulder, by means of which a ligature will prevent the artery from slipping off, and to

prevent escape of blood, this latter (A) sitting snugly on to the former (W).

This instrument was exhibited, and its action illustrated, to the Boston Medical Improvement Society, and to the Norfolk District Society.

By means of this instrument several experiments were undertaken, with a view to

determine any especial condition of the arterial pulsation which might be induced by the exhibition of this drug upon the lower animals. From these a few experiments are selected as having the most direct and positive bearing upon this question.

Exp. VI. b.—With hæmadynamometre in carotid artery. Dog, weighing 45 pounds.

A. m. s.	Max.	Min.	Pulse.	Resp.	Symptoms and Remarks.
0.00.00	5.00 in.	4.65 in.	134	40	Chloroform 4 oz., followed by ether inhalation.
			148	34	Anæsthesia; bound on the table.
			174	58	Veratris grs. 34 in acid. acct. dil. hypoderm.; struggling.
0.02.00	4.30	4.00	112	40	Animal calm.
0.03.15	4.00	3.60	120	36	
0.06.15	3.50	3.10	112	40	
0.08.30	3.10	2.80	120	36	
0.09.30	3.40	3.00	116	32	
0.10.00	3.30	2.90	116	16	Muscular quiverings, especially in trunk.
0.12.30	3.60	3.10	114	15	Ether removed.
0.14.00	3.45	3.00	108	12	Oscillation of mercurial column slight.
0.15.00	3.40	3.30			
	2.90	2.50			
0.16.00	3.10	2.80	108	10	Abdominal or diaphragmatic respiration.
0.18.00	2.50	2.00	102	34	
0.19.00	3.00	2.50			
0.20.30	3.40	3.10	104	34	Resp. feeble. Arterial tension increased on inspiration.
0.25.00	3.60	3.00	102	124	Animal gasps. Mercurial column ascends.
					Instrument cleaned, as oscillation of merc. col. ceased.
0.27.00	4.70	4.40	88	11	Instrument again cleaned, as oscillation has ceased.
0.28.00	3.90	3.70	80		
0.30.00	3.50	2.50	86	32	Respiratory gasp.
0.31.30	3.85	3.75	80	28	Skin of body cold to the touch.
0.33.30					Instrument again cleaned.
0.35.00	3.85	3.85	72	22	
0.37.30	4.50	4.30	84	17	Oscillation occurs when struggling.
0.40.00			98	10	
0.45.00			98	14	
0.49.00			108		
0.52.00	3.82	3.77	120	15	Instrument again cleaned.
0.54.00	3.77	3.70	120	13	Respiration irregular.
1.00.00	3.95	3.92	128	20	Musc. relaxation. Loss of sensation in the integument.
					Difficult resp., with violent movements of muscles of the neck and larynx.
1.05.00	3.90	3.87	108	12	Respiration very feeble and imperfect.
1.09.00			128	Ceased.	Coarse mucous râles in throat for the last 30 minutes.
1.10.00			92		
1.12.00			Ceased.		No response to electrical stimulation of nerves, though the muscular fibres contract when the electric poles are applied to the muscles directly.
1.15.00					Nerves of neck and forearm exposed and isolated on glass rods; electricity applied to these, produces no muscular contractions.
1.35.00					The spinal axis in cervical and lumbar regions exposed (without bruising or cutting the membranes) and the poles of the induction coil applied to each spot, producing no muscular contractions anywhere; though applied directly to any muscular substance, the contraction of the muscular fibres is very marked.
N. B.			148	34	Before the operation or administration of chloroform.
			174	56	Perfect anæsthesia.
			142	40	Perfect anæsthesia.

Exp. X.—With tinct. ver. vir. 3ij. Dog. Hæmadynamometre.

A. m. s.	Mean height in inches.	Pulse.	Resp.	Symptoms and Remarks.
0.00.00		145 to 200	48	Anæsthesia by chloroform and ether.
		145 to 220	48 to 48	
		168 to 220	36 to 48	Ether removed.
		180	40	Oscillation 2-10ths inch. Hypoder. injec. into abdom. reg.
0.03.30	5.30			Animal calm.
0.04.15	5.15	100	28	
0.07.00	5.21	64	26	
0.09.00	5.20		26	Cries on expiration.
0.09.45	5.18	64		Occasional resp'y gasps. P. feeble. Attempts to vomit.

A. m. s.	Mean height in inches.	Pulse.	Resp.	Symptoms and Remarks.
0.12.45	5.20	76		Spasmodic movement of diaphragm.
0.16.15	5.20	92		Blood dark colored from artery.
0.19.00	6.40			Merc. column ascends on inspir. and descends on expir.
0.21.30	5.75	128	16	
0.22.30	5.65		6	Respiration very irregular.
0.25.15	5.61		48	Respiratory movements suddenly recommenced.
0.26.00		120	16	
0.27.30	5.55	140		Pressure less on inspiration. Respiration irregular.
0.29.30	5.53			Three deep inspirations, followed by several gasps.
0.31.30				Intermission of slow pulsations.
0.33.45	6.00			Surface of skin cold. Several attempts at vomiting.
0.35.30		72	40	Respiration, irregular before, now recommences.
0.39.30	3.40	60		Pulse very intermittent.
0.43.00				Instrument clogged.
0.44.15			14	Dark blood oozes from artery drop by drop.
0.46.00				No response to pinching or pricking of skin.
0.46.30				Instrument removed. Respiration jerky.
0.48.00				Blood still oozing from artery, of a dark color.
0.51.45			11	Blood is drawn from artery by a syringe.
0.57.00				Ineffectual attempts at vomiting.
0.58.00		Ceased.	Ceased.	Vomits up yellow mucus.
				Heart ceases its pulsations a few seconds after cessation of respiration.
1.01.00				Several movements of diaphragm, like those of vomiting. Thorax opened. Electricity applied causes muscular contractions of voluntary muscles. Heart will not contract from electrical stimulation.

*Autopsy.*—Dark fluid blood in right ventricle and auricle. Black clot in left ventricle. No fluid in pericardium. Lungs collapsed—nothing peculiar in appearance. Bladder distended with urine.

*Exp. XI.*—Hæmadynamometre. Dog, 60 pounds weight. Tinct. ver. vir.  $\text{3iv}$ . and veratris q. s. Animal bound upon the operating board.

A. m. s.	Max. in. centim.	Min. in. centim.	Pulse.	Resp.	Symptoms and Remarks.
			136	21	Before administration of drug, but after inhala. of ether
0.03.00	180*				Instrument connected with right femoral artery.
0.06.00	166	160	180	24	Ether removed. Ver. vir. tinct. 2 dr. in left thigh.
0.20.00			120	20	Animal crying.
0.28.00	170				
0.31.00	160	140			Great salivation.
0.33.00	200				Oscillation accords with respiratory motion.
0.35.00	153	150			Struggling.
0.37.00			180	18	Instrument,† being clogged, is removed.
0.40.00			160	16‡	Animal cries with expiration.
0.42.00			150	24	Continues the same till
0.48.00			120		
1.00.00			150	22‡	Animal struggling.
1.04.00			200	20	
1.08.00			220	20	Intermission of one pulsation after each ten.
1.09.00			180	18	
1.12.00			200	18	Slight muscular quiverings. Expiration shorter.
1.15.00			180	16	No intermissions.
1.23.30			180	20	
1.27.00			220	18	Struggling.
1.34.00			150	17‡	Surface of skin cold.
1.37.00			140	15	
1.39.00			180	17	
1.45.00				16	
1.48.00					Another dose of 2 dr. hypodermically, in axilla, causing
					apparent pain.
2.00.00	175	140	160	16	Instrument reapplied. Variation accords with respiratory
					movement.
2.09.00			160	19	
2.17.00			160	16	Animal is quiet.
2.28.00			144	15	Sensation apparently preserved.
2.35.00					Animal is now set at liberty and placed on the floor.
					Walks with a staggering gait, the muscles stiff and con-
					tracted, then falls over on to his side, and lies quietly,
					occasionally moaning.
					Tries ineffectually to rise, constantly moaning, and seems
					uneasy.
2.42.00				14	

\* 1 centimetre = 0.393 of an inch.  
186 centimetres = 7.3093 inches.

† This was of imperfect construction, and only the comparative result is to be considered.

A. m. s.	Max. in Centim.	Min. in Centim.	Pulse.	Resp.	Symptoms and Remarks.
2.50.00				16	Rises with great difficulty, staggering as before, but walking backwards more easily; suddenly falls down on to his side and lies with his limbs extended. Moans and constantly shifts position of his limbs; gets up on his belly, and then lies down again, curled up, with his head on his paws, in position of sleep.
3.00.00				14	Great trembling of muscles of head and body.
3.05.00			120	16	Lying down on side, and then rises to position on his belly. Subulatus tendinum. On being raised to his feet, totters, whines and falls.
3.22.00					Has lain quietly, with occasional moaning.
4.20.00				16	Veratrin, dissolved in acetic acid, is given.
4.30.00					Hypodermic in left shoulder and in the lumbar region.
5.10.00				24	Has a dejection of soft feces.
5.20.00			68	48	Respiration irregular and sighing.
5.25.00					Expiration very short.
5.30.00			64	36	
5.28.00			60	36	Pulse very regular. Expulsion of flatus.
5.32.00					Got up on his feet, and fell over suddenly; then arose and staggered across the room, falling over in a tonic spasm.
5.37.00			58	56	Noisy mucous respiration. Spasm. Stepping on the tail causes him to raise the head and to withdraw the tail.
5.45.00			58	48	Violent vomiting of a viscid fluid, with blood (from his bitten tongue).
					Another convulsion. Noisy respiration. Mucous râles in throat. Skin cold.
5.58.00					Respiration ceased for one whole minute.
6.03.00					Occasional respiratory gasps. Ejection of urine.
6.13.00			60		Reflex action of eyelids gone. Spinal cord exposed at dorsal and lumbar regions without being injured.
6.20.00			Ceased.	Ceased.	Electrical stimulation from induction coil produces no muscular contractions, one pole applied to each exposed portion. No muscular contractions when these are applied to an isolated nerve, or when one is placed on the spinal cord and the other on the cranial nerve. The same is true of the sciatic nerve, except for the muscles in the immediate vicinity of the pole or poles; but, if the poles are applied to the muscular substance anywhere, there ensues violent muscular contraction of its fibres. (The contraction of the above muscles when the poles were applied to the nerves was due to the electric current exciting this muscular irritability, as the nervous filaments supplied by the sciatic nerve had been cut.) All of these experiments were completed within 25 minutes of the cessation of cardiac pulsation. Rigor mortis came on during these last experiments and continued over 30 hours after.
6.22.00					
6.42.00					

*Autopsy* (sixteen hours after death).—Dark red coagula in both ventricles and in right auricle. Left auricle empty. Right auricle full and flaccid, as also the right ventricle. All the valves intact and healthy.

Lungs collapsed and filled with dark-colored blood, somewhat like red hepatization, with slight crepitation under the scalpel or between the fingers. Liver healthy. Stomach contracted firmly and empty, with the rugæ well defined. No redness or injection of mucous surface; veins of external portion slightly injected. Blood coagulated as usual in the veins.

From a careful examination of the records of these experiments it will be noticed that the respiration becomes irregular before the depressing action upon the circulation is produced, thus pointing to phenomena which will be hereafter spoken of in connection with the nervous system.

It will be noticed that the operation of

connecting the instrument with the circulation was accomplished while the animal was in a state of anaesthesia from an inhalation of chloroform and ether; but also it must be remarked, that in Exp. VI. b the anaesthetic was removed in fourteen minutes, that in Exp. X. the anaesthetic was removed before the drug was exhibited, and that in Exp. XI. it was removed in three minutes after injection of the drug; but that in all of these experiments the effects produced are coincident.

If the effects upon the respiration be carefully noticed, it will be seen that the respiratory movements grow more and more feeble, the muscles which assist in expanding and contracting the thorax perform their office in an imperfect way, and finally they become paralyzed. Our attention was directed early, during our course of experimentation, to this peculiarity, but it was only after an insight into the poisonous ac-

tion of this drug upon the nervous system was obtained, that the cause of this difficult respiration was remarked.

It will be still further demonstrated by the *post-mortem* peculiarities. The muscular fibres retain their power of contraction. But, yet, when the nerve going to these muscular fibres is stimulated, there is no contraction. The same is true in the motor-nervous centre, which seems to have lost all vitality, though this is not the case when death is caused through some other agency. The early presence of rigor mortis shows how the equilibrium between the muscular and nervous vitality is destroyed.

The turgescence of the right side of the heart would also point to the probable cause of death; viz, asphyxia, which would also explain the ecchymosis or marbriform appearance of the lung tissue, and perhaps, partially explain the convulsive movements. The catharsis, also, would show that the nervous influence from the spinal centre which maintains the tonic contractions of the sphincters and checks the peristalsis of the intestines, is lost or enfeebled, thus allowing the involuntary muscular fibres to contract and to evacuate the contents of the alimentary canal. Another apparent proof of this nervous paralysis is, that by relaxing the voluntary muscular fibres some of the symptoms peculiar to this drug, viz., vomiting, diarrhoea, and tetanic convulsions, are prevented. It is remarked, however, by Bernard in his lectures, delivered during this past winter, that, while in a state of anaesthesia, either the absorption of drugs is delayed or the manifestation of their symptoms is prevented. It is thought by us that the latter supposition is the most correct.

We do not pretend to explain all its peculiar action as being due to the paralysis of the motory centres. There is certainly some action upon the peripheral sensation (we do not use this as a scientific term), by which numbness is experienced; though every symptom proves that this numbness is not due to diminution of function in the nerves conveying the sense of pain, for the prick of a pin causes exaggerated pain. This peculiarity is very marked in cases of accidental poisoning from veratria, as well as by the local contact of the leaf or tincture of this plant upon the skin or mucous membrane.

So far as we can learn from our observations, the capillary circulation is not primarily modified by this drug.

Veratria causes by its absorption, in a way that we cannot now define, a paralysis, or

suspension, of the function of the spinal axis, or of the peripheries and termini of the nerves, and if carried to a certain extent, prevents the vital functions from being carried on, from which death results.

Prevost\* attempts by a series of experiments to disprove this supposition, but the fallacy of his reasoning may be determined.

He noticed that, when the vessels of a limb were severed and the nerves intact muscular rigidity did not exist; that, when the vessels were intact and nerves were cut, there was rigidity of the muscles. This experiment serves but to strengthen our supposition. By cutting the nerves, the nervous equilibrium is destroyed, and the muscular fibres contract in consequence, but if the nerves are whole and the vessels supplying these nerves with the vital fluid are severed, both nerves and muscular fibres lose their vital properties, as shown by Brown-Séquard in *Journal de Physiologie*, and there is no tetanic contraction. What renders Prevost's explanation of his experiment, viz., the direct irritation of the muscular fibres by the poisonous blood, more unsatisfactory is, that it is only by irritation of the peripheral nervous fibres that he produced this tetanic rigidity. The same effect is shown by the rigor mortis ensuing so soon after death.

As we do not presume to admit that there can be different and opposite physiological effects produced by different doses of the same drug, small doses of this drug enfeeble the spinal cord and modify the respiratory and circulatory functions; the former being first affected, as on account of the embarrassment of the thoracic muscles, this function would be suspended before that of the heart.

To prove more conclusively the effect of this drug upon the spinal cord, the following experiment was performed.

Exp. XII.—*A black and tan dog killed by asphyxiation; electrical conductivity of nerves.*

A wet towel was firmly held over and around the mouth of the dog, and the trachea compressed by the hand. For 0.10'. Imperfect respiration maintained; heart pulsates 66 per minute. After

13'. The head of the animal, now quiet, was immersed in a basin of water and maintained there till

20'. The cardiac pulsations could no longer be determined. The spinal cord was immediately exposed at the upper dorsal and lumbar vertebrae, at the latter place being slightly injured.

\* *Commentaires Thérapeutiques*, &c., p. 610.

- 36'. The poles of the induction coil were applied to the cord at the places exposed, and there ensued slight contractions in the muscles of the back and trunk. The sciatic
- 40'. nerve was then exposed, and isolated on glass rods; one pole of the coil being placed upon the dorsal portion of the spinal axis, and the other upon the nerve, caused the same muscular contractions. The same was true when the crural nerve, isolated in the same way, was touched by the two poles. The muscular contractility was as strong as usual. All of
- 45'. these experiments were concluded within twenty-five minutes after the death of the animal.

It may be here remarked, that the increased amount of carbonic acid in the blood (in consequence of death from asphyxia) may have prevented the muscular contractions from being as strong as we have seen in animals whose death has been caused in a different way or by another drug than veratria.

- 1 hr. 0'. *Autopsy*.—There was no rigor mortis; muscular relaxation perfect. An examination of lungs showed some congestion of left lower lobe, and a marbriform appearance of the other lobes, which on being cut showed the same peculiarity.

A comparison of this experiment with those by veratria shows that though asphyxia was one, and, perhaps, the principal cause of death; yet, the action of this drug is not confined to producing asphyxia, for in the last experiment the electrical stimulation produces a different effect from what was caused in Expts. VI. b, and XI.

We can then accept van Praag's conclusion that death is caused by a spinal paralysis, until further experiments may show some other explanation of the phenomena.

### Bibliographical Notices.

*Die Beleuchtungsbilder des Trommelfells im Gesunden und Kranken Zustande*, von Dr. Adam Politzer; Docent der Ohren-Heilkunde an der Wiener universität, &c. Wien. 1865. 8vo. pp. 144.

*The Membrana Tympani in Health and Disease*, by Dr. Adam Politzer of the University of Vienna. Translated by A. Matthewson, M.D., and H. G. Newton, M.D. New York. 1869. 8vo. pp. 184. The monograph, which, in the original,

has had a place on our table for some time, has now been rendered into very excellent English by Drs. Matthewson and Newton, and the members of the profession generally are thus in possession of a valuable book on the membrana tympani in health and disease. The name of Politzer is not only well known to aural surgeons, but is becoming familiar to the general practice, especially as connected with his method of inflating the middle ear. The chief object in publishing this series of illustrations of the membrana tympani is to assist the practitioner in the perception of those material changes which can be recognized in the membrane. As is well known, even to non-specialists, the lesions of the external and middle ear on the whole furnish the most frequent sources of functional disturbance in the auditory apparatus; and again, such disturbances are often associated with changes in the membrane.

Acting on this idea, Prof. Politzer has very justly considered that the clear understanding of this portion of the auditory apparatus is of the first importance. He therefore devotes his first chapter to the anatomy of the membrane, giving therein the most modern investigations of the profession. He then describes, somewhat at length, the methods now employed for the inspection of the membrane and the appearances presented. The main body of the book is occupied with a discussion of the pathological states of the membrane, as shown under anomalies in transparency and color, anomalies in coherence and in curvature, and mobility of the membrane. The author is a surgeon of great experience; he has treated the subject in question very fully and skilfully, and the book should find a place on the table of every one interested in the treatment of the ear.

The book is especially remarkable for the beautiful chromo-lithographs of the membrana tympani. They were drawn and colored from nature by Dr. Politzer, and copied on stone by Dr. Heitzmann; the plates themselves being struck off in Vienna. B.

### Medical and Surgical Journal.

BOSTON: THURSDAY, OCTOBER 21, 1869.

#### NOTES FROM FOREIGN JOURNALS.

*Chemical Sign in Chronic Hepatitis*.—From the *Giornale Veneto di Scienze* we



translate a note by Dr. Primavera—On a Chemical Sign Distinctive of the Principal Periods of Chronic Hepatitis.

Every one knows that in a case of ascites an analysis of the urine is indispensable to the sure distinction of Bright's disease from other disorders which are wont to give rise to that form of dropsy; and especially to its diagnosis from cirrhosis of the liver. But it is not known to every one that the renal lesion once eliminated, and the chronic hepatitis admitted, the same assay, considered from another point of view, serves another purpose—viz., to distinguish the incipient from the advanced period of the affection. It is true that the semeiology, together with the employment of percussion, furnishes a potent means of solving the question; but besides that in such important matters there is no harm in having an additional indication, I may be permitted to observe that the displacement produced by the ascites, and also the latter lesion itself, often puzzle the most expert clinicians. I therefore hasten to publish the result of a series of observations, clinical, chemical and anatomical, registered during the last two years in the annals of our hospital clinique, and expressed in this formula, which may be called a true semeiological law—in cases of chronic hepatitis, whether interstitial or parenchymatous, the analysis of the urine furnishes, by itself alone, a means of distinguishing the incipient from the advanced period of the disease. To explain. In the first stage, the urine of the patient whose liver has become the seat of cirrhosis by degeneration and atrophy of the parenchyma always contains something of a yellowish green color, except in rare cases when it is not visible, by reason of the predominance of a certain purple matter (*ureoritrina*). But even in the latter case, this nameless biliary pigment of the yellowish green hue, is not absent, as may be shown by means of chloroform—its only re-agent. *Vice versa*, when the hepatic parenchyma, either through inflammation or by compression resulting from hypertrophy of the connective tissue, comes to be spoiled, and, as it were, destroyed, then this peculiar biliary pigment is lost in the mass of the urine, the purple matter (*ureoritrina*) being aug-

mented to the maximum. The latter, when precipitated from the urine, attaching itself to some of the insoluble salts, assumes the aspect of brick dust sediment.

*Successful Employment of Bromide of Potassium.*—The case is reported by Dr. Ricard in the *Union Médicale*.

E. C., æt. 12, of a nervous temperament, subject to frequent headaches, was seized the 2d of July, 1869, without discoverable cause, with tingling in the left arm and leg, impeding his movements of those limbs. The next day his parents noticed that their son was seized with unwonted stammering; three attacks of palpitation, followed by slight syncope, set in, in the course of the day; cramps sufficiently painful to wring cries from the patient were felt in the left arm and leg. The child entreated his mother to rub smartly those parts, and seemed to obtain some amelioration from the friction. These attacks, which at first showed themselves only three or four times a day, soon recurred with great frequency, being ultimately repeated five or six times daily, with constantly increasing intensity. The intellectual functions were not at all disturbed; and there was no fever. This sad condition continued without being met by any rational medication till the 19th of July, when Dr. R. was summoned. The Doctor had an opportunity of witnessing an attack during his visit. The flexor muscles of the affected limbs were the seat of violent contractions, alternating with disordered movements. There was much agitation and complaint of suffering. Friction at the painful points seemed to moderate the trouble, which lasted only a few minutes, and was soon followed by complete tranquillity.

The course of the symptoms not appearing connected with any congestive state of the great nervous centres, I thought them attributable to a purely functional lesion, and, as they presented the most striking analogy with chorea, to be properly ranked with the neuroses. This diagnosis necessarily led Dr. R., he says, to a treatment which was the logical result of it. He had several times had occasion to administer, and with success, the bromide of potassium in different diseases in which the nervous

erethisms predominated; and thinks the use of the medicament was favorable to recovery in this case. He prescribed a solution of 20 grammes (gramme=15.444 grains Troy) of the bromide salt in 300 grammes of distilled water. Two tablespoonfuls of the preparation were given the two first days, the dose being then gradually increased to four tablespoonfuls. The number of attacks diminished proportionally with the increase of the quantity administered, and on the fifth day all spasm had disappeared. The remedy was continued eight days more to prevent the return of the symptoms, which did not show themselves for a month. Dr. R. thinks it proper to mention that no other remedy was employed concurrently, and that therefore the credit of this prompt and remarkable cure belongs to the bromide of potassium.

*Chromidrosis.*—A detailed account of a case of this disease is given by Dr. Fermand in the *Union Médicale*. The heads of the case are these.

A youth of 16 was on the first of February withdrawn from college and taken home, where the reporter visited him the following day. He was of a nervous temperament, and of a constitution below the average in firmness, although he had never been sick. A pyretic affection was diagnosed, and for a few days the physician doubted between acute phthisis and typhoid fever. The patient had been much debilitated for a month previous. Had suffered loss of sleep and appetite. Febrile action appeared particularly in the evening, though irregularly. There was quite frequent cough without expectoration; slight epigastric sensibility; prostration of the mental and physical functions. Subsequently—it is asserted—the development of the affection was that of typhoid fever, without predominance of the symptoms in the direction of either of the visceral cavities, but with all the essential symptoms of the disease.

Convalescence, we are told, was complicated by intense "remittent fever;" pain and swelling of the liver; slight pleurisy on the right side; and on the same side a bullo-pustular eruption, with severe pain; also great prostration.

These complications having disappeared,

and the patient being in full convalescence, the colored sweat made its appearance. One day while sponging the surface with a mixture of cologne and common water, he thought he noticed an abnormal color in the pubic region, near the right groin. The sponge removed a greyish-blue substance, which, though but slightly miscible with water, nevertheless colored that which had been used for washing. The next day the same phenomenon appeared more distinctly, and attention being called to it, the details were taken notice of. The patient found, at the left groin, and especially in the neighborhood of the pubes, a substance of a greenish blue, this time spread out like a coat of paint. By contact with the moistened sponge, this coating was detached, though not readily, and a sort of foam was produced. From the marked blue color it had while on the skin, it changed to a tint tending toward a green, and communicated that tint to the water used in washing. This appearance was attended with no pain, or normal sensation, and would not have been perceived if it had not been for the practice of washing which has been mentioned. His health notwithstanding continued to improve, and he was seen by his physician only at long intervals. He handed the latter a phial containing about 200 grammes of the lotion colored by the substance in question. A quite copious powdery or granular deposit occupied the bottom of the containing vessel, and was of the same color as the liquid. Under the microscope nothing was seen but amorphous corpuscles of homogeneous structure, not granular and of a lamellated appearance. M. Méhu, chief pharmacist to *Hopital Necker*, made a chemical examination of the deposit, and discovered only that coloring matter analogous to indigo or *indican*, which is found in the urine accidentally or even physiologically (Schunck), also in the blood (Plater) and likewise in the sweat (Bizio)—the uroglaucone of Heller, the cyanourine of Braconnot.

The seat of the secretion was adverted to as being singular, and as seeming to prove that though chromidrosis is more readily detected on uncovered portions of the body, it is possible for it to occur elsewhere.

We would add to the remarks of Dr. Fer-

rand here cited, that the fact of the subject of this secretion being of the male sex is worthy of note; as it has in the vast majority of instances been observed in females, whence its genuineness as a physiological product has been doubted, the supposition being that the coloring was artificial, and that the explanation of its occurrence was to be found in hysterical deception.

In the *Dublin Quarterly Journal of Medical Science* is a paper by Dr. Foot, entitled "Two Cases of Chromidrosis with Remarks." The monograph is an elaborate and exhaustive statement of what is known on the subject of the disease. We give some extracts.

"The first case—that of the black discoloration—occurred in a young lady of 16. About a fortnight before I first saw her (which was October 23d, 1867) she had caught cold and got a pain in her side and back; a week after this event a sooty looking stain made its appearance, first upon the inner border of the right lower eyelid and afterwards upon the left lower eyelid, so that the discoloration had existed for a week when it came under my observation. I found a diffused blackish-looking smut of the color of light Indian ink, or of ink and water, a greyish sootiness, upon the cutaneous surface of each lower eyelid, looking just as if the lids had been blacklead; the lids could be partially cleaned of the discoloration by being gently rubbed with a soft handkerchief; the stuff could be quite removed by washing, but reappeared soon again; more or less of the blackness was transferred to any material pressed against the part, and there was a distinctly appreciable powder of the finest description on the parts. The sensibility of the eyelids was not much increased; they were more vascular than usual, and a tendency to perspire from the lower lids had been observed. The uterine functions were more than naturally active, the catamenia appearing more frequently and more profusely than they should. She had absolutely no appetite, was very easily fatigued, had a short occasional cough, and some pain referred to the left subscapular region, which, in the absence of any discoverable cause, was attributed to neuralgia; her complexion was sallow, and there were indications that the liver was not acting in a healthy manner. On one occasion, subsequent to the appearance of the discoloration, she had been 'hysterical, laughing and crying.' Beyond

these points there was no appreciable departure from health."

The subject of the second case was a married lady, "about 26 years of age, regular in all details of menstruation, of fair complexion, and striking beauty. Without any assignable reason, both lower eyelids became bluish, simultaneously, and to an equal extent; the discoloration was unattended by pain, and increased gradually in degree until the upper and lower eyelids of each eye became of an intense blue; the color was very persistent, and did not appear to be intermittent in its formation while the lady was under observation; it was a source of much annoyance, owing to the attention it attracted in the street and elsewhere. At the time this sketch was made the affection had existed for six months. Such are the particulars which I have received, and it is to be regretted that they are not more complete; but as the case has not been published, and as it contrasts strongly with the black form of the disease, I thought it might with advantage be alluded to on the present occasion.

"As the term chromidrosis, or chromydrose is that generally used on the continent for this affection, I shall adopt it without at present discussing its suitability, or the other terms for which it has been substituted. The term chromidrosis is a general one, comprehending any discoloration of any part of the external skin, which is due to the exudation of a special pigment—black, brown, blue or yellow—provided that the discoloration be on the outer surface of the skin, susceptible of removal by friction, and of being reproduced after a variable interval of time. This definition is framed for the purpose of excluding from the category of chromidrosis all such subcutaneous discolorations as are obscured in Addison's disease, in jaundice, cyanosis, sunburn, the cutaneous pigmentations of the breasts and abdomen witnessed in pregnancy—the utero-ovarian melasma of Laycock—and the leaden hue which results from precipitation of metallic silver in the skin after protracted employment of the soluble salts of that metal; in none of these does the pigment appear on the free surface of the skin or become capable of removal by gentle friction."

Dr. Foot gives a table of thirty-eight cases of the disease on record. "The first points," he says, "which will arrest attention in looking through these thirty-eight cases is that the affection is much more frequently observed in women than in men; thirty-four times the disease has occurred

in women, four times in men, and that it is generally young women who are the subjects of it, the mean age of the females being about twenty-two, although the extreme ages range from 15 to 57. In twenty-nine cases ten were married and nineteen unmarried. In by far the greater number of cases the coloration appears on some part of the face, and in half the cases the discoloration was black or blackish. There is generally some disturbance of the uterine functions and a debilitated state of health antecedent to the appearance of the colored exudation. All ranks of life are liable to it.

"The fact of so many cases occurring in young women has unfortunately militated against the careful study of the disease, and certainly has greatly contributed to the disbelief of many in this affection. These young women, they say, are hysterical, they paint themselves, they put on lamp-black, graphite, indigo, black lead, to acquire an interesting appearance, to attract observation. There have been one or two notable instances of deception, cases in which coloring matter was put on the face, and imposture successfully kept up for a length of time; and these cases have done more to throw doubt on the existence of chromidrosis than a host of genuine cases have to establish it."

The fact that pretended cases of this disease have been shown to be fictitious does not prove that all alleged instances of it are deceptions. And as Dr. Foot says, there is hardly a known disease which has not been simulated.

"Marriage does not appear to have any effect upon the disease, as in one of de Méricourt's cases (*op. cit.* p. 52) the black coloration continued after the birth of several children, although during lactation it notably diminished. In a second case it persisted very intensely in spite of marriage, the birth of a child, and the appearance of perfect health; it persisted equally in a third case during pregnancy. Four cases have been observed in men; one was in a farm-steward, aged 47; a second in the captain of a French frigate, aged 48; a third in a gentleman of 46; a fourth in a naval lieutenant, aged 32. It will be easily seen that hysteria, at least as the term is generally understood, cannot be solely responsible for chromidrosis; cases of well-marked hysteria and of deranged uterine functions are common enough; cases of chromidrosis are rather rare. In a very large number of the cases the patients were married; in those married during its existence this event, so

often regarded as a panacea for hysteria, had no beneficial effect, nor had pregnancy, or the bearing of children. The affection was also seen in a lady who had ceased menstruating a year or two previously, and finally, in four men of middle age employed in active and responsible duties."

"The usual situation for the first appearance of chromidrosis is the lower eyelids; then in order of frequency follow the upper lids, the cheeks, forehead, sides of nose, whole face, sternal region, chest, abdomen, greater part of the front of the body, the back of the hands. The ears, at least their concave surface, have never been observed to be affected, nor has the posterior aspect of the trunk. In by far the greater number of cases, the discoloration commences on the lower eyelids, generally at their inner borders; when the four lids are affected, the two lower are much more colored than the two upper; the exudation is almost always symmetrical, though to this rule there are exceptions; the color is very liable to be intermittent in its appearance, and is liable to reappear after a long absence, and when it has been apparently cured; it generally returns after the reception of some mental or bodily shock, or some deterioration of health. The formation of the color is sometimes very rapid—it may be formed two or three, or five or six times in the twenty-four hours."

"The eyelids being the prime and principal seat of chromidrosis, it is not surprising that local symptoms often, though not always, prevail in them; they are frequently very sensitive, congested, hot, puffed, itchy, and, as might be expected, the nervous derangement or neurosis, which exists in the lids, is not strictly confined to these appendages, but extends further; lacrymation and spasmodic action of the orbicular muscle being not uncommon."

"From the chemical and microscopic character of the coloring matter in cases of chromidrosis there is very strong reason to believe that it is closely connected, if not identical, with the indigo compounds."

"It is well known to every one that indigo, as it exists originally in the sap of woad, is not blue but colorless, and that in the process of its manufacture into indigo-blue it changes from white to yellow, yellow to green, and green to blue; and there is another grade of oxidation by which blue indigo is transformed to red. Indican or colorless indigo is also found in the blood of man, and in the urine and blood of the ox (Carter, *Ed. Med. Jour.*, Aug., 1859; Watts, *Dict. of Chem.*, Vol. iii., p. 246,

1865). Indican may be detected in the urine by precipitating the urine with basic acetate of lead, collecting the precipitate which forms in the filtrate on the addition of ammonia, and decomposing it with cold dilute acids; the filtrate deposits first indigo-blue, then indirubin or indigo-brown, and afterwards other products of the decomposition of indican. The indican obtained from the urine appears perfectly similar to the indican obtained from the indigo-plant, and which is the mother-substance of indigo-pigment.

"There is nothing extraordinary in the discovery of a vegetable product in the animal body; the occurrence of indigo or of an indigo-producing substance in the secretions of men and animals is an example of the inter-dependence of vegetable and animal chemistry so frequently shown in the relationship or even identity of products formed in vegetable and animal organisms."

"A remarkable connection may be observed between the occurrence of chromidrosis and erysipelas of the face. In the two cases recorded by Dr. Neligan and Dr. Banks erysipelas of the face preceded the exudation of coloring matter; in Fauvel's it succeeded it; in Mr. Teevan's it occurred during the continuance of the chromidrosis. In almost all the other cases the appearance of the discoloration was preceded or attended with some one or more of such local symptoms as heat, congestion, prickling and tingling sensations, puffiness, headache, hyperesthesia. These symptoms indicate a want of tone in the cutaneous vaso-motor nerves, a vaso-motor neurosis, such as induces the asthenic sweatings observed in debilitated constitutions."

"A combination of constitutional treatment with local application of astringent spray or lotion offers the greatest promise of success; and any therapeutical indication which a careful examination of the general health may suggest should be eagerly seized on, and be followed out with perseverance for a considerable time before the cure of the affection can be reasonably expected."

**THREE FORMS OF ALLEGED NEUROSIS.**—It may, perhaps, be interesting to note that the attention of medical readers has been called within a few months to three affections of the cutaneous surface, as traceable with more or less of plausibility to nervous lesion: viz., herpes zoster; unilateral sweating of the head; color-sweating—chromidrosis—of various parts of the body. In the language of debate the neuroses have the floor.

**BOSTON DISPENSARY.**—The following are the statistics of this institution for the year ending Sept. 30th, 1869. The number of new patients at the Central Office is 15,051, of which 10,423 are medical cases, and 4628 surgical, as follows:

	MEDICAL.			Total.
	Men.	Women.	Children.	
1st quarter,	483	847	641	1971
2d "	659	1164	832	2655
3d "	630	1350	876	2856
4th "	616	1354	971	2941
Total,	2388	4715	3320	10,423

	SURGICAL.			Total.
	Men.	Women.	Children.	
1st quarter,	347	328	362	1037
2d "	457	310	439	1206
3d "	404	348	446	1198
4th "	333	388	466	1187
Total,	1541	1374	1713	4628

The number of new patients in the Districts is as follows:—

	Men.	Women.	Children.	Total.
1st quarter,	387	747	1011	2145
2d "	434	965	1101	2500
3d "	314	721	889	1924
4th "	313	708	929	1950
Total,	1448	3141	3930	8519

RESULTS.		
Discharged, cured or relieved,	-	7908
Sent to Hospitals, or removed from Districts,	-	286
Died,	-	304
Under treatment,	-	89

Under treatment at last annual report, 8597

Number of cases at Central Office, 15,051

Total number at Central Office & in Districts, 23,570

	PATIENTS, NEW AND OLD, AT CENTRAL OFFICE.		Total.
	Medical.	Surgical.	
1st quarter,	5264	1707	6971
2d "	5898	2030	7928
3d "	6199	1838	8037
4th "	5633	1674	7307
Total,	22,994	7249	30,243
Number of cases of midwifery,	-	-	104
Number of recipes during the year,	-	-	53,411
Number of cases since July, 1856,	-	-	548,941
Number of patients since July, 1856,	-	-	257,400
Average daily attendance during the year,	-	-	98

#### SURGEONS.

Francis H. Brown, M.D. John Homans, M.D.  
Seth L. Sprague, M.D. J. Brackett Treadwell, M.D.

#### PHYSICIANS.

Hall Curtis, M.D. F. B. Greenough, M.D.  
J. McLean Hayward, M.D. Wm. F. Munroe, M.D.  
P. A. O'Connell, M.D. Charles E. Inches, M.D.  
Charles B. Porter, M.D. Samuel G. Webber, M.D.  
S. W. Langmaid, M.D. John C. Warren, M.D.  
Frederic I. Knight, M.D. J. Franklin Appell, M.D.

For officers of Dearborn Branch, see Vol. III., p. 106, N. S.

#### DISTRICT PHYSICIANS.

No. 1.—Henry Tuck, M.D.  
No. 2.—John B. Fulton, M.D.  
No. 3.—David H. Hayden, M.D.  
No. 4.—Wm. H. H. Hastings, M.D.  
No. 5.—Robert Disbrow, M.D.  
No. 6.—Alfred L. Haskins, M.D.  
No. 7.—David F. Lincoln, M.D.  
No. 8.—Hugh Doherty, M.D.

A. K. Carruthers, Apothecary; John H. Abbott, Assistant Apothecary; Dennis Graham, Second Assistant Apothecary.

SAMUEL A. GREEN, M.D., Superintendent.

## Medical Miscellany.

**REGISTRATION OF NURSES.**—The difficulties of obtaining a nurse, in cases of sudden sickness, are well known to most families residing in Boston. In such emergencies, when the inconvenience and perplexity are most felt, it is often necessary to search for hours, and even days, for a nurse who may be ready to come, and living at the next door, and yet cannot be found, from the simple want of a proper system of registration. With a desire to obviate some of these inconveniences, and that the attempt may lead to the adoption of some more thorough system, a Registry has been opened at the room of the Ladies' Relief Agency, No. 37 Charity Building, Chardon St., where all persons who wish to procure situations as nurses for the sick, monthly and wet nurses, and night watchers, are invited to record their names and recommendations. Office open daily (excepting Sundays), from 10 A.M., till 2 P.M.

**References.**—Rev. E. M. P. Wells, D.D., at St. Stephen's House; Miss Annie S. Robbins, at House of Good Samaritan; D. Humphreys Storer, M.D., Tremont Street; Amos A. Lawrence, Esq., Longwood.

The *Union Médicale* announces that Hebra and Sigmond, who have been for twenty years Professors extraordinary without remuneration, have just been named Professors in ordinary. The *Union* adds that this is a just but tardy recompense of their zeal.

**THE DECOLORIZATION OF TINCTURE OF IODINE.**—... The ordinary soap liniment does not actually decolorize the iodine, yet it possesses the great advantage of enabling us to rub it freely into the skin without the characteristic color of iodine being imparted to it; and thus we can use iodine as an external application where the antipathies or caprice of patients would otherwise present a formidable barrier to its use, were it employed in the ordinary way. As a liniment, one part of tincture of iodine, one of glycerine, and two of soap liniment, may be used for a long time without producing much cutaneous irritation, or any characteristic decolorization. Stains caused by the accidental application of tincture of iodine may be at once removed by the use of soap liniment.—*California Medical Gazette*.

**THE SUBCUTANEOUS USE OF CHLORFORM.**—In reference to the very interesting report on the new anæsthetic, chloral, which we publish this week, we would direct attention to the observation that when chlorform in a sufficient quantity is injected subcutaneously, it seems, like chloral, to produce a narcotism which lasts many hours, and does not appear to be succeeded by any stage of excitement analogous to that which follows the narcotism of chlorform inhalation. The observation, if confirmed, is of great interest, as it illustrates a law which has not, of late years at least, received a due amount of attention—that the physiological action of a substance may be modified by the mode in which it is introduced into the animal body.—*Lond. Med. Times and Gazette*.

**INMAN'S FORMULA FOR CASES OF FÆTHISIS.**—Thomas Inman, of Liverpool (*The Med. Mirror*), states that his favorite formula for cases of ophthalmia, or general debility, is this:—Keep the stomach for food, the rectum for physic, and the skin for oil." It is a homely saying, but not the less true on that account.—*N. Y. Medical Record*.

**CHLORFORM IN SYPHILITIC ULCERS.**—This treatment has been introduced by Dr. Llamal, physician-in-chief of cutaneous and venereal diseases at Presbourg, who affirms that it is less painful than other treatment, and cures the wound rapidly.—*Union Méd. de la Gironde*.

**GLASS NOT A CERTAIN INSULATOR.**—An electrical coil has lately been made in London which sends the lightning spark through five inches of solid glass.

**PRINCE NAPOLEON'S POMPEIIAN PALACE,** on the avenue Montaigne, in Paris, is about to be purchased by the municipality of that city and opened as a scientific institute.

**DECLENSION OF THE CONSUMPTION OF TOBACCO.**—Tobacco manufacturers state that there is an annual decline in the consumption of fine-cut chewing tobacco.

### MEDICAL DIARY OF THE WEEK.

MONDAY, 9 A.M., Massachusetts General Hospital, Med. Clinic. 9 A.M., City Hospital, Ophthalmic Clinic.  
TUESDAY, 9 A.M., City Hospital, Medical Clinic, 10 A.M., Surgical Lecture. 9 to 11 A.M., Boston Dispensary. 9-11 A.M., Massachusetts Eye and Ear Infirmary.  
WEDNESDAY, 10 A.M., Massachusetts General Hospital, Surgical Visit. 11 A.M., OPERATIONS.  
THURSDAY, 9 A.M., Massachusetts General Hospital, Medical Clinic. 10 A.M., Surgical Lecture.  
FRIDAY, 9 A.M., City Hospital, Ophthalmic Clinic; 10 A.M., Surgical Visit; 11 A.M., OPERATIONS. 9 to 11 A.M., Boston Dispensary.  
SATURDAY, 10 A.M., Massachusetts General Hospital Surgical Visit; 11 A.M., OPERATIONS.

**ERRATA.**—In the article entitled "The Internal Use of Carbolic Acid," page 162, first column, twentieth line from the bottom, instead of "undisturbed" read *undisturbed.*" Second column, near the top, instead of as in the text, read "The interference is decided when one part in two hundred and forty is present; and the one eightieth part entirely prevents digestion."

**DIED.**—At Lowell, Oct. 16th, Kirk Henry Bancroft, M.D., aged 31 years.—At Athol Depot, Oct. 16th, James Coolidge, M.D., aged 38 years.

**DEATHS IN BOSTON** for the week ending October 16, 1866. Males, 53—Females, 53.—Accident, 4—disease of the bowels, 1—congestion of the brain, 4—disease of the brain, 4—bronchitis, 1—cancer, 3—cholera infantum, 6—cholera morbus, 1—consumption, 16—convulsions, 5—croup, 2—diarrhea, 7—diphtheria, 3—dropsy, 2—dropsy of the brain, 3—drowned, 1—dysentery, 2—erysipelas, 1—scarlet fever, 3—typhoid fever, 3—infantile disease, 6—disease of the kidneys, 2—disease of the liver, 1—congestion of the lungs, 2—inflammation of the lungs, 2—malformation, 1—marasmus, 2—old age, 6—paralysis, 2—premature birth, 1—pyæmia, 1—teething, 1—unknown, 4—whooping cough, 3.

Under 5 years of age, 46—between 5 and 20 years, 8—between 20 and 40 years, 19—between 40 and 60 years, 18—above 60 years, 15. Born in the United States, 76—Ireland, 24—other places, 6.